

## Equality

You declare you see me dimly  
through a glass which will not shine,  
though I stand before you boldly,  
trim in rank and marking time.

You do own to hear me faintly  
as a whisper out of range,  
while my drums beat out the message  
and the rhythms never change.

Equality, and I will be free.  
Equality, and I will be free.

You announce my ways are wanton,  
that I fly from man to man,  
but if I'm just a shadow to you,  
could you ever understand?

We have lived a painful history,  
we know the shameful past,  
but I keep on marching forward,  
and you keep on coming last.

Equality, and I will be free.  
Equality, and I will be free.

Take the blinders from your vision,  
take the padding from your ears,  
and confess you've heard me crying,  
and admit you've seen my tears.

Hear the tempo so compelling,  
hear the blood throb in my veins.  
Yes, my drums are beating nightly,  
and the rhythms never change.

**Equality, and I will be free.**  
**Equality, and I will be free.**

## Appendix G: Program Guide

### March 29, 1999

6:00-8:00      *Pre-Conference Reception*  
Concurrent: *Steering Committee Members Coordination/Facilitation Meeting*

### March 30, 1999

7:45-8:30      *Registration*

8:30-8:45      *Welcome*  
Dr. Eucharia E. Nnadi, Vice President of Academic Affairs  
University of Maryland Eastern Shore

8:45-9:15      *Charge to the Conference*  
Dr. N. Joyce Payne, Director,  
Office for the Advancement of Public Black Colleges, NASULGC  
Scott B. Gudes, Deputy Under Secretary for Oceans and Atmosphere, NOAA  
Dr. Earl S. Richardson, Chairman,  
President's White House Initiative Advisory Board on HBCUs  
President, Morgan State University

9:15-10:30      *Panel 1: Opportunities in Marine and Atmospheric Sciences*  
*Then, Now, and Beyond Y2K*  
Moderator: Dr. Andrew Rosenberg, NOAA/National Marine Fisheries Service  
*Panel A: Perspectives from NOAA's Leadership*  
General John Kelly, Jr., National Weather Service  
Gregory Withee, National Environmental Satellite, Data, and Information Service  
Dr. Ronald Baird, Office of Oceanic and Atmospheric Research  
Dr. Margaret Davidson, National Ocean Service  
*Panel B: Perspectives from Academia's Oceanic and Atmospheric Leaders*  
Dr. Margaret Leinen, University of Rhode Island  
Dr. James Arrington, South Carolina State University  
Dr. Larry Earvin, Clark-Atlanta University

10:30-10:45      COFFEE BREAK

10:45-11:45      *Panel 2: Student Perspectives A Reflection on Institutional Culture*  
Moderators: Dr. Brian Bingham, Western Washington University

Robert Stockman, NOAA/National Weather Service  
Panelists: Danica R. Starks, American University  
Ricardo Lopez, University of Alaska  
Avery Henry, University of Maryland Eastern Shore  
Rafael Mahecha, Jackson State University

Ashanti Johnson-Pyrtle, Texas A&M University  
Kelly Clark, University of Maryland College Park

- 11:45-12:15 *Building Alliances Between HBMSCUs and the Department of Commerce*  
*Keynote Address:* Robert Mallett  
Deputy Secretary, U.S. Department of Commerce  
*Introducing Mr. Mallett:*  
Scott B. Gudes, Deputy Under Secretary for Oceans and Atmosphere  
National Oceanic and Atmospheric Administration
- 12:15-1:00 LUNCH  
Concurrent: *Stakeholder Executive Session*
- 1:00-2:00 *Panel 3: Agency Perspectives-Support for Programs in Marine and Atmospheric Sciences*  
Moderators: Dr. Denise Stephenson-Hawk, Clark-Atlanta University  
Dr. Brad Brown, NOAA/National Marine Fisheries Service  
Panelists: Frederick J. Thompson, U.S. Environmental Protection Agency  
Dr. Matthew Gilligan, Savannah State University  
Dr. Ian MacGregor, National Science Foundation
- 2:10-4:00 WORKING GROUPS:  
*Assessment and Review of NOAA's and Academic Institutions' Education and Research Programs*  
Moderators: Dr. Emorcia V. Hill, Abt Associates, Inc.  
Dr. Mildred Ofosu, Delaware State University  
*Atmospheric Working Group*  
Group Leaders: Paul S. Trotter, NOAA/National Weather Service  
Dr. Denise Stephenson-Hawk, Clark-Atlanta University  
*Oceanic/Marine Working Group*  
Group Leaders: Dr. David Mountain, NOAA/NMFS/Northeast Fisheries Science Center  
Dr. Jonathan Wilson, Morgan State University  
*Coastal/Limnological Working Group*  
Group Leaders: Dr. Benjamin Cuker, Hampton University  
Harold M. (Hal) Stanford, NOAA/National Ocean Service
- 5:00-6:00 POSTER SESSION  
Convener of Student Participants:  
Dr. Kelly Mack, University of Maryland Eastern Shore  
Convener of NOAA Participants:

Dr. Sheila Stiles, NOAA/NMFS/Northeast Fisheries Science Center

6:00-6:30 RECEPTION

6:30-8:00      CONFERENCE BANQUET  
*Speaker:* Dr. Dolores Spikes  
President, University of Maryland Eastern Shore  
*Introducing Dr. Spikes:*  
Dr. N. Joyce Payne, NASULGC

March 31, 1999

7:30-8:30      *Registration/Continental Breakfast*  
Concurrent: *Stakeholder Executive Session*

8:30-9:30      *Panel 4: Enhancing Professional Partnerships with the Private Sector*  
Moderators: Julian M. "Skip" Wright, NOAA/National Weather Service  
Dr. Benjamin Cuker, Hampton University  
Panelists: Jason Taylor, Litton/PRC Inc.  
Andrew Humphrey, WRC-TV/NBC4  
Aaron O. Morgan, Jr., 21st Century Aquaculture, Inc.  
Michael J. Marcheselli, Electronic Innovators, Inc.  
Kevin McCarthy, Benthos, Inc.

9:30-10:30      *Panel 5: Doing Business with NOAA*  
Moderators: Benjamin Watkins, NOAA/National Environmental Satellite, Data  
and Information Service  
Dr. Roman Jesien, University of Maryland Eastern Shore  
Panelists: Human Resources    Fara Guest, NOAA  
Grants/Cooperative Agreements    Steven Drescher, NOAA  
Procurement    Barbara Booker, NOAA  
Client Perspective    Dr. Steven Swartz, NOAA  
Client Perspective    Essie Coleman-Duffie, NOAA

10:30-10:45      COFFEE BREAK

10:45-12:30      CONCURRENT PANEL SESSIONS  
*Panel 6: Sustained Research Funding: Opportunities at NOAA for HBMSCUs*  
Moderators: Dr. Livingston Marshall, Morgan State University  
Gregory Withee, NOAA/National Environmental Satellite, Data, and Information Service  
Panelists: Dr. James Arrington, South Carolina State University  
Dr. John Boreman, NOAA/National Marine Fisheries Service  
Dr. W. Stanley Wilson, NOAA  
Dr. Paul Croft, Jackson State University

*Panel 7: Student Networking and Discussion*

Moderators: Dr. Kelly Mack, University of Maryland Eastern Shore  
Jan Kucklick, NOAA/National Ocean Service

Panelists: Dionne L. Hoskins, University of South Carolina  
Andrea Rocha, Texas A&M, Corpus Christi



Maronda Brown, University of Connecticut  
Dr. George B. Brooks, Jr., University of Arizona

- 12:30-1:15 LUNCH  
Concurrent: *Stakeholder Executive Session*
- 1:15-2:30 *Panel 8: Building and Expanding Sustainable Alliances  
Between HBMSCUs and NOAA  
Presentation of recommendations from the working groups*  
Moderators: Dr. Sharon H. Walker, NOAA/Office of Oceanic and Atmospheric  
Research  
Dr. Reginald B. Lawrence, NOAA/National Environmental Satellite, Data, and  
Information Service  
Reporters: Dr. Denise Stephenson-Hawk, Clark-Atlanta University  
Dr. Matt Gilligan, Savannah State University  
Dr. Roman Jesien, University of Maryland Eastern Shore  
Paul S. Trotter, NOAA/National Weather Service  
Benjamin Watkins, NOAA/National Environmental Satellite, Data, and  
Information Service
- 2:30-3:00 *Closing Remarks Promises Yet to Keep*  
Dr. Ambrose Jearld, Jr., Conference Chairman, NOAA/NMFS  
Dr. Andrew Rosenberg, NOAA/NMFS
- 3:00 *Adjournment and Tea*  
*Conference participants are invited to tour the  
University of Maryland Eastern Shore Science and Technology Facilities*
- 4:00 Executive Session: Invited Stakeholders Meeting

## **Appendix H: Poster Session Exhibits**

### *National Sea Grant College Program, Silver Spring*

Sue Borda, National Sea grant College Program

### *Introduction to The National Centers for Environmental Prediction (NCEP)*

David Caldwell

Kevin McCarthy

NOAA, National Weather Service Center for Environmental Prediction

Camp Springs, MD

### *NOS Coast Survey Exhibit*

Ashley Chappell

NOAA, NOS Coast Survey, National Ocean Service

Office of Coast Survey

Silver Spring, MD

### *Use of the Global Positioning Systems (GPS)*

Charles Challstrom

NOAA, National Ocean Service

National Geodetic Survey

Silver Spring, MD

### *Prevention, Preparedness, Response and Restoration Concerning Environmental Threats*

Ali Senauer

NOAA, National Ocean Service

Office of Response and Restoration

Silver Spring, MD

### *NOAA Coastal Management Fellowship Program*

Janet Kucklick

NOAA, National Ocean Service

Coastal Service Center

Charleston, SC

### *Office for Law Enforcement Exhibit*

Linda Taylor

NOAA, Office for Law Enforcement

Silver Spring, MD

*NOAA Fisheries Program Exhibit*

Natalie Huff  
Operations Management Information  
NOAA, National Marine Fisheries Service  
Silver Spring, MD

*Overview of the Trip Information Program (TIP)*

Pamela Brown-Eyo  
Guy Davenport  
Joshua Bennett  
NOAA, National Marine Fisheries Service  
Southeast Fisheries Science Center  
Miami, FL

*NMFS South Florida Ecosystem Restoration, Information and Outreach Initiative*

Essie Coleman-Duffie  
Bradford E. Brown  
Nancy B. Thompson  
NOAA, National Marine Fisheries Service  
Southeast Fisheries Science Center  
Miami, FL

*Cutaneous Viral Papillomatosis in a West Indian Manatee  
(Trichechus manatus Latirostris)*

Ruth Ewing<sup>1</sup>  
Gregory D. Bossart<sup>2</sup>  
Mark Lowe<sup>3</sup>  
<sup>1</sup> NOAA, NMFS, Southeast Fisheries Science Center  
<sup>2</sup> University of Miami Division of Comparative Pathology  
and Miami Seaquarium  
<sup>3</sup> Midway Animal Hospital  
Miami, FL

*Overview of the Programs at the Galveston Laboratory*

James Randolph  
Joanne Williams  
NOAA, National Marine Fisheries Service  
Southeast Fisheries Science Center  
Galveston Laboratory  
Galveston, TX

*Bay Scallop Restoration Studies in the Niantic River*

Ronald Goldberg/(F. Thurberg)  
Jose Pereira  
Paul Clark  
NOAA, National Marine Fisheries Service  
Northeast Fisheries Science Center  
Milford Laboratory  
Milford, CT

*Seaweed Aquaculture*

Ronald Goldberg<sup>1</sup> /(F. Thurberg)  
Paul Clark<sup>1</sup>  
Gary Wikfors<sup>1</sup>  
Muki Shpigel<sup>2</sup>  
<sup>1</sup> NOAA, NMFS, NEFSC, Milford Laboratory, Milford, CT  
<sup>2</sup> Israel Oceanographic and Limnological Research  
National Center for Mariculture, Eilat, Israel

*The Base of the Food Chain: Microalgal Research at NMFS, Milford*

Mark Dixon/(S. Stiles)  
Gary Wikfors  
Barry Smith  
Jennifer Alix  
NOAA, National Marine Fisheries Service  
Northeast Fisheries Science Center  
Milford Laboratory  
Milford, CT

*Genetic and Breeding Investigations of the Bay Scallops, (Argopecten Irradians)*

Sheila Stiles<sup>1</sup>  
Joseph Choromanski<sup>1</sup>  
Christopher Cooper<sup>1</sup>  
Qin-Zhao Xue <sup>2</sup>  
<sup>1</sup> NOAA, NMFS, NEFSC, Milford Laboratory, Milford, CT  
<sup>2</sup> Chinese Academy of Sciences, Qingdao, China

*Growth of Bay Scallops (Argopecten Irradians Irradians) in Lantern Nets*

James Widman/(S. Stiles)

NOAA, National Marine Fisheries Service  
Northeast Fisheries Science Center  
Milford Laboratory  
Milford, CT

*Organic Contaminants in Flesh of Four Species of Recreational Fish  
in the New York Bight*

Ashok D. Deshpande/(D. Johnson)  
Andrew Draxler  
Thomas Finneran  
Kathleen Corbo  
NOAA, National Marine Fisheries Service  
Howard Marine Sciences Laboratory  
Highlands, NJ

*Seasonal Patterns in Abundance of Calanus finmarchicus 1977- 1987*

Carol J. Meise<sup>1</sup>/(D. Johnson)  
Jay O'Reilly<sup>2</sup>  
Joseph Kane<sup>2</sup>  
<sup>1</sup> NOAA, National Marine Fisheries Service  
Howard Marine Sciences Laboratory, Highlands, NJ  
<sup>2</sup>NOAA, National Marine Fisheries Service  
Narragansett Laboratory  
Narragansett, RI

*Habitat Use and Growth Patterns of Young-of-the-Year Winter Flounder  
in Three Northeastern U.S Estuaries.*

Beth A. Phelan<sup>1</sup>/(D. Johnson)  
Kenneth W. Able<sup>2</sup>  
Anne L. Studholme<sup>1</sup>  
<sup>1</sup> NOAA, National Marine Fisheries Service  
Howard Marine Sciences Laboratory, Highlands, NJ  
<sup>2</sup> Institute of Marine and Coastal Sciences  
Rutgers University  
800 Great Bay Blvd.  
Tuckerton, NJ

*Elemental Composition of Otoliths of Fish from the Northwest Atlantic*

*and Gulf of Mexico*

Vincent Zdanowicz<sup>1</sup>/(D. Johnson)

Peter J. Hanson<sup>2</sup>

David H. Secor<sup>3</sup>

<sup>1</sup> NOAA, National Marine Fisheries Service

Howard Marine Sciences Laboratory, Highlands, NJ

<sup>2</sup>NOAA, National Marine Fisheries Service

Beaufort Laboratory, Beaufort, NC

<sup>3</sup> University of Maryland,

Chesapeake Biological Laboratory, Solomons, MD

*Water Property Variability During the U.S. GLOBEC Georges Bank Study*

David Mountain

Maureen Taylor

Christina Bascunan

NOAA, National Marine Fisheries Service

Northeast Fisheries Science Center

Woods Hole, MA

*Status of Fishery Resources Off the Northeast USA - 1999*

Steve Murawski

Population Dynamics Branch

NOAA, National Marine Fisheries Service

Northeast Fisheries Science Center

Woods Hole, MA

*Larval Cod And Haddock Distribution And Growth During The U.S. GLOBEC  
Georges Bank Study*

Jack Green<sup>1</sup>

Rebecca Jones<sup>1</sup>

Stephen Brownell<sup>1</sup>

David Mountain<sup>2</sup>

<sup>1</sup>NOAA, NMFS, NEFSC, Narragansett Laboratory

Narragansett, RI

<sup>2</sup>NOAA, NMFS, NEFSC

Woods Hole, MA

*Marine Biotoxins Program*

John Ramsdell/(B. Haynes)

Elizabeth Fairey

National Ocean Service

Charleston, SC

*NOAA Fisheries Human Resources Exhibit*

Fara Guest

NOAA, NMFS, Human Resources

Silver Spring, MD

*Pima/Maricopa Irrigation Project*

George Brooks

Department of Land and

Water Resources

Gila River Indian Community

Sacaton, AZ

## Appendix I: Conference Evaluations

### Summary

The overwhelming majority of participants rated the conference as excellent or very good and as being very useful and informative. The largest consensus of opinion was for the panel on Student Perspectives. Sixty-nine percent of responding participants said it was outstanding to hear the students' concerns and their strategies for entering into the oceanic and atmospheric sciences. Participants also were pleased with the opportunities to network with the various agencies, HBMSCUs, and private sector businesses. These, along with the evident commitment that NOAA and the Department of Commerce have made to diversity, were seen as the major strengths of the conference. There were two overriding concerns for the conference: 1) how can the recommendations be made into actions, when many of the recommendations from the 1995 conference were not followed up on, and 2) how can the conference more accurately represent the diversity of minorities within America. A number of lesser concerns, ranging from the length of panel presentations to the sound system, were also mentioned.

### Tally

Fifty-two (52) evaluations were collected. There were four sections to the conference evaluation form. The first section collected data on the participants. The second section asked participants to rate each segment of the conference from *Excellent* to *Poor*. The third section asked participants to assess how much information was received from each segment from *A Lot* to *None*. For the second and third sections, the tally indicates both the number and percent of respondents to each rating. Respondents did not necessarily answer each question, so number totals are frequently less than 52 (the total number of evaluations collected) and percentages less than 100%. The answers with the greatest number of responses are listed in bold type. The fourth section asked for short answer comments. Responses suggested by more than one respondent are listed in bold type.

### SECTION ONE: PARTICIPANT INFORMATION

#### What is your affiliation?

Academia:	Students 8	Administrators	2	Faculty 4
Government:	Federal 30			
Private Sector:	Non-Profit 2			
Combined:	Faculty/Federal 3	Student/Federal 1	Student/State 1	

#### Did you attend the 1995 Expanding Opportunities Conference?



Yes 6  
No 35

## SECTION TWO: EVALUATION OF THE CONFERENCE

Please rate the following aspects of the conference from Excellent to Poor:

<b>Tuesday</b>	<b>EXCELLENT</b>	<b>VERY GOOD</b>	<b>GOOD</b>	<b>FAIR</b>	<b>POOR</b>
Charge	16 31%	<b>20</b> <b>38%</b>	6 12%	2 4%	0 0%
Panel 1 <i>Opportunities</i>	13 25%	<b>19</b> <b>36%</b>	12 23%	4 8%	0 0%
Panel 2 <i>Student Perspectives</i>	<b>36</b> <b>69%</b>	9 17%	6 12%	0 0%	0 0%
Panel 3 <i>Agency Perspectives</i>	14 27%	<b>19</b> <b>36%</b>	11 21%	6 12%	0 0%
Working Groups	8 15%	<b>14</b> <b>27%</b>	8 15%	2 4%	1 2%
<b>Wednesday</b>	<b>EXCELLENT</b>	<b>VERY GOOD</b>	<b>GOOD</b>	<b>FAIR</b>	<b>POOR</b>
Panel 4 <i>Private Sector</i>	11 21%	<b>19</b> <b>36%</b>	16 31%	1 2%	1 2%
Panel 5 <i>Business w/NOAA</i>	<b>18</b> <b>35%</b>	17 33%	9 17%	4 8%	0 0%
Panel 6 <i>Research Funding</i>	8 15%	<b>13</b> <b>25%</b>	8 15%	1 2%	0 0%

Panel 7	<b>14</b>	11	2	0	0
<i>Student Networking</i>	<b>27%</b>	21%	4%	0%	0%
Panel 8	<b>10</b>	<b>10</b>	4	0	0
<i>Building Alliances</i>	<b>19%</b>	<b>19%</b>	8%	0%	0%

<b>Wednesday <i>continued</i></b>	<b>EXCELLENT</b>	<b>VERY GOOD</b>	<b>GOOD</b>	<b>FAIR</b>	<b>POOR</b>
Closing	5 10%	<b>12</b> <b>23%</b>	1 2%	0 0%	0 0%
Networking <i>With students</i>	<b>22</b> <b>42%</b>	10 19%	6 12%	1 2%	0 0%
Networking <i>With professionals</i>	<b>24</b> <b>46%</b>	13 25%	5 10%	0 0%	0 0%
Overall	<b>21</b> <b>40%</b>	17 33%	4 8%	1 2%	0 0%

### SECTION THREE: EVALUATION OF THE INFORMATION GAINED

**How much information and understanding of issues related to increasing minority participation in the oceanic, marine, environmental, and atmospheric professions did you gain from the following conference activities?**

<b>Tuesday:</b>	<b>A LOT</b>	<b>SOME</b>	<b>VERY LITTLE</b>	<b>NONE</b>
Charge	<b>28</b> <b>54%</b>	12 23%	1 2%	2 4%
Panel 1 <i>Opportunities</i>	<b>27</b> <b>52%</b>	18 <b>35%</b>	5 10%	2 4%
Panel 2 <i>Student Perspectives</i>	<b>34</b> <b>65%</b>	12 23%	2 4%	1 2%
Panel 3 <i>Agency Perspectives</i>	21 40%	<b>24</b> <b>46%</b>	0 0%	2 4%
Working Groups	<b>17</b> <b>33%</b>	14 27%	3 6%	0 0%



<b>Wednesday</b>	<b>A LOT</b>	<b>SOME</b>	<b>VERY LITTLE</b>	<b>NONE</b>
Panel 4 <i>Private Sector</i>	15 29%	<b>23</b> <b>44%</b>	6 12%	3 6%
Panel 5 <i>Business w/NOAA</i>	<b>20</b> <b>38%</b>	<b>20</b> <b>38%</b>	5 10%	0 0%
Panel 6 <i>Research Funding</i>	15 29%	<b>17</b> <b>33%</b>	3 6%	1 2%
Panel 7 <i>Student Networking</i>	<b>21</b> <b>40%</b>	6 12%	0 0%	0 0%
Panel 8 <i>Building Alliances</i>	<b>16</b> <b>31%</b>	15 29%	2 4%	1 2%

#### **SECTION FOUR: ADDITIONAL COMMENTS**

##### **1. What aspects of the conference were MOST HELPFUL?**

**Networking with students, faculty, NOAA, and the private sector.**

**Hearing student perspectives.**

**The clear commitment NOAA and DOC made to the conference and HBMSCUs.**

**Learning concrete ways to acquire and increase funding and employment opportunities for minorities.**

**The in-depth working groups.**

**Knowledge of opportunities in the private sector.**

**The great setting few distractions and a congenial atmosphere.**

The interaction amongst the government, academic, and private business sectors.

Speaking with other minority students and hearing about their experiences.

Poster session for information and opportunity.

Realizing how poorly the government communicates its needs and opportunities to students and professors.

Dr. Richardson s knowledge and his ability to speak with NOAA.

##### **2. What aspects were LEAST HELPFUL?**

**The long length of panel presentations.**

**Not having an agenda to look at prior to the conference.**

**The lack of time for questions in the panel sessions.**

**The repetitive presentations of NOAA's inner workings .**

**The working groups could not accommodate all the participants.**

**Business and policy discussions.**

The first stakeholders luncheon.

Tuesday's conference banquet. Coming at the end of a long day, I was too tired to focus.

Long way to drive.

Unclear future for this process.

Student perspectives.

Closing remarks.

Agency perspectives.

The redundancy of Panel 8.

### **3. What were the MOST IMPORTANT ISSUES discussed?**

**Student perspectives.**

**Finding out about employment opportunities inside and outside of government.**

**Finding out concrete information on what to do and who to contact within NOAA.**

**Presentation by Mr. Mallett.**

**Agency perspectives.**

**Variety and levels of networking opportunities.**

**Good opportunities for sustained discussion.**

**Hearing the details of existing links between NOAA and HBMSCUs.**

**Working groups.**

**Discussion of available funding .**

**Recognition of the need for sustained funding.**

**Discussing how to change the elementary and secondary school curriculum so as to attract more minorities into the sciences.**

**Partnerships with the private sector.**

**Interaction among the various agencies, academia, and the private sector.**

**The need for HBMSCUs to keep current of new science discoveries and of NOAA's employment needs.**

**The need to develop broader skills within science.**

Presentation by Dr. Spikes.

Plenary sessions.

The theme of promoting diversity in our disciplines to parallel the diversity of America.

Poster Session.

The need to be more politically savvy and to lobby Congress.

Presentation by Dr. Richardson.  
Views of professors and administrators at HBMSCUs.  
Charge to the conference.

**4. What were the LEAST IMPORTANT ISSUES discussed?**

**The internal workings of NOAA.**

**Business and policy discussions.**

**Role of private industry.**

**Working group discussions.**

Budgetary problems      solutions cannot be applied interchangeably .

Joint Institute Recommendations.

Student perspectives .

**5. As a result of your participation in this conference, what new ACTIONS will you take when you return to your work and community?**

**Disseminate the information I received here.**

**Follow up on the contacts I made here.**

**Be more active in promoting conferences and getting students involved.**

**Keep pushing importance of diversity initiatives during challenging budget time.**

**Be more diligent in locating programs that provide me with interns.**

**Have more contact with the federal, state, and municipal governments.**

**Re-educate my office of the need to support efforts to increase minority employment.**

**Increase networking with students and potential employers and educational institutions.**

Continue to develop my database for HBMSCUs.

Participate more in mentoring and career fairs.

Insist on being a part of the follow-up team to see actions followed through.

Increase involvement in alumni affairs.

Increase involvement in community affairs, particularly issues that affect students.

Rewrite my resume and indicate my strengths in advising institutions and programs on recruitment and cultivation of minority students as well as being an experienced teacher.

Contact criminal justice program at UMES.

Working directly with administrators at HBCUs to start seeking funding.

New opportunities to recruitment.

Try to ID sea grant partners for our university.

Try to hold a grant writing workshop on DOC and NOAA.

Liaisons with three HBMSCUs and URI.

Request we send posters out to HBMSCUs on our graduate program at the

University of Charleston.  
 Explore opportunities for cooperation and collaboration.  
 Be aware of conference results.  
 Schedule visits to some HBMSCUs and attempt to convince colleagues to visit as well.  
 Call the New England Board of Higher Education (NEBHE) to become a mentor.  
 Attempt to establish MOU between our lab and several HBMSCUs.  
 Look into the possibility of changing existing priorities to provide support for HBMSCUs.  
 Write reports to brief managers and reach people.  
 Write articles for Highlights.  
 Write article for GAEEA (a newsletter for women geo-scientists).  
 Keep myself informed of HBMSCUs students that come to work for NOAA.  
 Explore having academic faculty come into my government office to support research and development.  
 Actively work to recruit and retain graduate students.  
 Develop a good reward system for my staff that serves as mentors for students.  
 Implement more focussed outreach to HBMSCUs.

## **6. Are there ADDITIONAL COMMENTS you want to make?**

### **About the Conference Facility and Organization**

**Please provide e-mail addresses and phone numbers of participants.**  
**Please provide more activities for the students.**  
**Please provide more opportunities for the students to speak.**  
**Please provide the conference agenda prior to the conference.**  
**Please stick to the timelines.**  
**Too many panelists and moderators on one panel.**  
**The panelists needed to stay focused on their topic.**  
 Excellent conference accommodations and facilitation.  
 Planning group members were not acknowledged during the conference.  
 More participants need to utilize visual aids.  
 Platform too small for 6-7 panelists and 2 moderators.  
 Please have more breakfast meetings.  
 There should have been microphones for the audience.  
 There should have been more than coffee at the break.  
 We need more opportunities to interact with students as part of such a conference.  
 We need a more attentive sound support staff.  
 Poster sessions must be co-located with rest of conference.



## **About the Issues Addressed by the Conference**

**Excellent conference.**

**Have a follow-up conference in 2-3 years.**

**The conference needs a greater emphasis on all minorities. The conference was focused only on African-Americans, making me wonder if this wasn't about diversity but about African-American success.**

**Make sure to establish mechanisms to implement these recommendations.**

**There seems to be little accomplished since the 1995 conference.**

**Oceanic and Atmospheric Sciences must not be treated separately from the Geosciences.**

There should have been a speaker to represent the West Coast Division of NOAA.

The conference needs to develop a set of measure by which to gauge the success of implementing recommendations.

Create a web site exclusively for this conference.

All agencies should submit their names to Fara Guest for a need for summer interns.

## **Appendix J: A List of Historically Black and Minority-Serving Colleges and Institutions**

### **Historically Black Institutions, listed by state**

#### **ALABAMA**

Alabama A&M University	Huntsville, AL 35762
Alabama State University	Montgomery, AL 36195
Bishop State Jr. College	Mobile, AL 36990
Concordia College	Selma, AL 36701
Fredd State Technical College	Tuscaloosa, AL 34501
Lawson State Community College	Birmingham, AL 35211
Miles College	Birmingham, AL 35208
Oakwood College	Huntsville, AL 35896
Selma University	Selma, AL 36701
J.F. Drake Technical College	Huntsville, AL 35811
Stillman College	Tuscaloosa, AL 35401
Talladega College	Talladega, AL 35160
Trenholm State Technical College	Montgomery, AL 36108
Tuskegee University	Tuskegee, AL 36088

#### **ARKANSAS**

Arkansas Baptist College	Little Rock, AR 72202
Philander Smith College	North Little Rock, AR 72202
Shorter College	North Little Rock, AR 72114
University of Arkansas at Pine Bluff	Pine Bluff, AR 71601

#### **DELAWARE**

Delaware State University	Dover, DE 19901
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#### **DISTRICT OF COLUMBIA**

Howard University	Washington, DC 20059
University of the District of Columbia	Washington, DC 20008

#### **FLORIDA**

Bethune Cookman College	Daytona Beach, FL 32015
Edward Waters College	Jacksonville, FL 32209
Florida A&M University	Tallahassee, FL 32307
Florida Memorial College	Miami, FL 33054

**GEORGIA**

Albany State College	Albany, GA 31705
Clark-Atlanta University	Atlanta, GA 30314
Fort Valley State College	Fort Valley, GA 31030
Interdenominational Theological Center	Atlanta, GA 30314
Morehouse College	Atlanta, GA 30314
Morehouse School of Medicine	Atlanta, GA 30310
Morris Brown College	Atlanta, GA 30314
Paine College	Augusta, GA 30910
Savannah State University	Savannah GA 31404
Spelman College	Atlanta, GA 30314

**KENTUCKY**

Kentucky State University	Frankfort, KY 40601
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**LOUISIANA**

Dillard University	New Orleans, LA 70122
Grambling State University	Grambling, LA 71245
Southern University System	Baton Rouge, LA 70813
Southern University A&M College	Baton Rouge, LA 70813
Southern University at New Orleans	New Orleans, LA 70126
Southern University at Shreveport	Shreveport, LA 71107
Xavier University	New Orleans, LA 70125

**MARYLAND**

Bowie State University	Bowie, MD 20715
Coppin State College	Baltimore, MD 21239
Morgan State University	Baltimore, MD 21239
University of Maryland Eastern Shore	Princess Anne, MD 21853

**MICHIGAN**

Lewis College of Business	Detroit, MI 48235
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**MISSISSIPPI**

Alcorn State University	Lorman, MS 39096
Coahoma Community College	Clarksdale, MS 38614
Hinda Community College	Utica, MS 39175
Jackson State University	Jackson, MS 39217
Mary Holmes College	West Point, MS 39773
Mississippi Valley State University	Itta Bena, MS 38941

Rust College  
Tougaloo College

Holly Springs, MS 39174  
Tougaloo, MS 39174

### **MISSOURI**

Harris-Stowe State College  
Lincoln University

St. Louis, MO 63103  
Jefferson City, MO 63013

### **NORTH CAROLINA**

Barber-Scotia College  
Bennett College  
Elizabeth City State University  
Fayetteville State University  
Johnson C. Smith University  
Livingstone College  
North Carolina A&T State University  
North Carolina Central University  
St. Augustine's College  
Shaw University  
Winston-Salem State University

Concord, NC 28025  
Greensboro, NC 27401  
Elizabeth City, NC 27909  
Fayetteville, NC 28301  
Charlotte, NC 28216  
Salisbury, NC 28144  
Greensboro, NC 27411  
Durham, NC 27707  
Raleigh, NC 27610-2298  
Raleigh, NC 27611  
Winston Salem, NC 27110

### **OHIO**

Central State University  
Wilberforce University

Wilberforce, OH 45384  
Wilberforce, OH 45384

### **OKLAHOMA**

Langston University

Langston, OK 73050

### **PENNSYLVANIA**

Cheyney State University  
Lincoln University

Cheyney, PA 19319  
Lincoln, PA 19352

### **SOUTH CAROLINA**

Allen University  
Benedict College  
Claflin College  
Clinton Junior College  
Denmark Technical College  
Morris College  
South Carolina State University  
Voorhees College

Columbia, SC 29204  
Columbia, SC 29204  
Orangeburg, SC 29115  
Rock Hill, SC 29731  
Denmark, SC 29042  
Sumter, SC 29150  
Orangeburg, SC 29117  
Denmark, SC 29042

**TENNESSEE**

Fisk University	Nashville, TN 37208
Knoxville College	Knoxville, TN 37921
Lane College	Jackson, TN 38301
Lemoyne-Owen College	Memphis, TN 38126
Meharry Medical College	Nashville, TN 37203
Tennessee State University	Nashville, TN 37209

**TEXAS**

Huston-Tillotson College	Austin, TX 78702
Jarvis Christian College	Hawkins, TX 75765
Paul Quinn College	Dallas, TX 75241
Prairie View A&M University	Prairie View, TX 77446
Saint Phillip s College	San Antonio, TX 75160
Southwestern Christian College	Terrell, TX 75160
Texas College	Tyler, TX 75702
Texas Southern University	Houston, TX 77004
Wiley College	Marshall, TX 75670

**VIRGINIA**

Hampton University	Hampton, VA 23668
Norfolk State University	Norfolk, VA 23504
Saint Paul s College	Lawrenceville, VA 23868
Virginia State University	Petersburg, VA 23806
Virginia Union University	Richmond, VA 23220

**WEST VIRGINIA**

Bluefield State College	Bluefield, WV 24701
West Virginia State University	Institute, WV 25112

**U.S. VIRGIN ISLANDS**

University of the Virgin Islands	St. Thomas, USVI 00802
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**Other Equal Opportunity Educational Colleges and Universities**

Atlanta Junior College	Atlanta, GA 30310
Chicago State University	Chicago, IL 60628
Compton Community College	Compton, CA 90221

Cuyahoga Community College  
Charles R. Drew University  
of Medicine and Science  
Highland Park Community College  
Kennedy-King College  
Medgar Evers College  
Roxbury Community College  
Sojourner-Douglass College  
Wayne County Community College

Cleveland, OH 44115  
  
Los Angeles, CA 90059  
Highland Park, MI 48209  
Chicago, IL 60621  
Brooklyn, NY 11225  
Boston, MA 02115  
Baltimore, MD 21206  
Detroit, MI 48226

## **Members of the American Indian Higher Education Consortium**

### **ARIZONA**

Navajo Community College	Tsaile, AZ 86556
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### **CALIFORNIA**

D-Q University	Davis, CA 95617
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### **KANSAS**

Haskell Indian Nations University	Lawrence, KS 66046
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### **MICHIGAN**

Bay Mills Community College	Brimley, MI 49715
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### **MINNESOTA**

Fond Du Lac Community College	Cloquet, MN 55720
Leech Lake Community College	Cass Lake, MN 56633

### **MONTANA**

Blackfeet Community College	Browning, MT 59417
Dull Knife Community College	Lame Deer, MT 59043
Fort Belknap Community College	Harlem, MT 59526
Fort Peck Community College	Poplar, MT 59255
Little Big Horn Community College	Crow Agency, MT 59022
Salish Kootenai College	Pablo, MT 59855
Stonechild Community College	Box Elder, MT 59521

### **NEBRASKA**

Nebraska Indian Community College	Winnebago, NE 68071
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### **NEW MEXICO**

Crownpoint Institute of Technology	Crownpoint, NM 87313
Institute of American Indian Art	Santa Fe, NM 87504
Southwest Indian Polytechnic Institute	Albuquerque, NM 87184

### **NORTH CAROLINA**

Pembroke State University	Pembroke, NC 28372
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### **NORTH DAKOTA**

Fort Berthold Community College	New Town, ND 58763
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Little Hoop Community College  
Standing Rock Community College  
Turtle Mountain Community College  
United Tribes Technical College

Fort Totten, ND 58335  
Fort Yates, ND 58538  
Belcourt, ND 58316  
Bismark, ND 58504

**SOUTH DAKOTA**

Cheyenne River Community College  
Oglala Lakota College  
Sinte Gleska University  
Sisseton Wahpeton Community College

Eagle Butte, SD 57625  
Kyle, SD 57752  
Rosebud, SD 57570  
Sisseton, SD 57262

**WASHINGTON**

Northwest Indian College

Bellingham, WA 98226

**WISCONSIN**

College of the Menominee Nations  
Lac Courte Oreilles Community College

Keshena, WI 54135  
Hayward, WI 54843



**Southeast Asian Studies Programs/Southeast Asian Resource Centers at Colleges and Universities**

Southeast Asia Program  
Cornell University  
Ithaca, NY 14853

University of Wisconsin  
Center for Southeast Asian Studies  
Madison, WI 53706

## **Hispanic Association of Colleges and Universities (HACU)**

### **ARIZONA**

Arizona Western College  
South Mountain Community College\*

### **CALIFORNIA**

California State University  
    Bakersfield  
    Fresno  
    Los Angeles  
Cerritos College  
College of the Sequoias  
Compton Community College  
Don Bosco Technical Institute  
East Los Angeles College  
Gavilan College  
Hartnell College  
Imperial Valley College  
Kings River Community College  
Los Angeles City College  
Los Angeles Harbor College  
Los Angeles Mission College  
Los Angeles Trade-Tech College  
Mount Saint Mary's College  
Mount San Antonio College  
Oxnard College  
Palo Verde College  
Rancho Santiago Community College  
Rio Hondo College  
Saint John's Seminary College  
San Bernardino Valley College  
San Diego State University  
    Imperial Valley Campus  
Southwestern College  
West Hills Community College

### **COLORADO**

Community College of Denver  
Otero Junior College

Pueblo Community College  
Trinidad State Junior College

### **FLORIDA**

Barry University  
Florida International University  
Miami-Dade Community College  
    Homestead Campus  
    Kendall Campus  
    Medical Center Campus  
    North Campus  
    Wolfson Campus  
Saint John Visnney College Seminary  
St. Thomas University  
St. Vincent de Paul  
    Regional Seminary

### **ILLINOIS**

Harry S. Truman College  
MacCormac Junior College  
Richard J. Daley College  
Robert Morris College  
St. Augustine College

### **NEW JERSEY**

Hudson County Community College  
Passaic County Community College

### **NEW MEXICO**

Albuquerque Tech-Voc. Inst.  
College of Santa Fe  
Dona Ana Branch Community College  
Eastern New Mexico University-  
    Roswell  
Luna Vocational Tech. Institute  
New Mexico Highlands University  
New Mexico State University-  
    Grants Campus

Main Campus  
Northern New Mexico  
Community College  
Sante Fe Community College  
University of New Mexico  
University of New Mexico-  
Valencia Campus  
Western New Mexico University

### **NEW YORK**

Bronx Community College  
City Univ. of New York-City College  
College of Aeronautics The City  
University of New York  
Herbert H. Lehman College  
Hostos Community College  
John Jay Coll. of Criminal Justice  
LaGuardia Community College  
Mercy College

### **TEXAS**

Alamo Community. College  
District  
Bee County College  
Del Mar College  
El Paso Community. College District  
Incarnate Word College  
Laredo Community College  
Our Lady of the Lake University  
Palo Alto College  
Saint Mary's University  
San Antonio College  
Southwest Texas Junior College  
St. Edward's University  
St. Philip's College  
Sul Ross State University  
Texas A&M International University

Texas A&M University- Kingsville  
Corpus Christi  
Texas State Tech. Coll.-Harlingen  
Univ. of Texas at Brownsville in  
Partnership w/Texas Southmost College  
University of Houston-Downtown  
University of Texas-Pan American  
University of Texas at El Paso  
at San Antonio

### **PUERTO RICO**

American University of Puerto Rico  
Antillian Adventist University  
Bayamon Central University  
Caribbean Center for Advanced Studies  
Caribbean University College  
  
Pontifical Catholic University  
of Puerto Rico  
Center for Advanced Studies on  
Puerto Rico and the Caribbean  
Colegio Universitario del Este  
Conservatory of Music of Puerto Rico  
InterAmerican University of Puerto Rico  
Aguadilla Campus  
Aracibo University College  
Barranquitas Campus  
Bayamon Campus  
Central Administration  
Fajardo Campus  
Guayama Campus  
Metropolitan Campus  
Ponce Regional College  
San German Campus  
Technological College of the  
Municipality of San Juan  
Universidad Metropolitana  
Universidad Politecnica  
de Puerto Rico  
Universidad del Turabo

University of Puerto Rico  
Aguadilla Regional College  
Aracibo Technological  
University College  
Bayamon Technological  
University College  
Carolina Regional College  
Cayey University College  
Central Administration Office  
Humacao Univ. College  
La Montana Regional College

Mayaguez Campus  
Medical Sciences Campus  
Ponce Technological  
University College  
Rio Piedras Campus  
University of the Sacred Heart  
  
Member of HACU Systems

TOTAL: 132

## **Colleges for Women Only**

### **ALABAMA**

Judson College

### **CALIFORNIA**

Mills College

Mount St. Mary's College

Scripps College

### **CONNECTICUT**

St. Joseph College

### **DISTRICT OF COLUMBIA**

Mount Vernon College

Trinity College

### **GEORGIA**

Agnes Scott College

Brenau University

Spelman College

Wesleyan College

### **ILLINOIS**

Lexington Institute of Hospitality Careers

### **INDIANA**

St. Mary-of-the-Woods College

St. Mary's College

### **KENTUCKY**

Midway College

### **MARYLAND**

College of Notre Dame of Maryland

Hood College

### **MASSACHUSETTS**

Aquinas College at Milton

Aquinas College at Newton

Bay Path College

Elms College

Emmanuel College

Endicott College

Fisher College

Lasell College

Lesley College

Mount Holyoke College

Pine Manor College

Regis College

Simmons College

Smith College

Wellesley College

### **MINNESOTA**

College of St. Benedict

College of St. Catherine St. Catherine

Campus

### **MISSOURI**

Cottey College

Stephens College

William Woods College

### **NEBRASKA**

College of St. Mary

### **NEW JERSEY**

Assumption College for Sisters

College of St. Elizabeth

Georgian Court College

Rutgers-The State University of New Jersey:

Douglas College

### **NEW YORK**

Barnard College

College of New Rochelle

Russell Sage College

Wells College  
William Smith College

Southern Virginia College for Women  
Sweet Briar College

**NORTH CAROLINA**

Bennett College  
Meredith College  
Peace College  
St. Mary's College  
Salem College

**WISCONSIN**

Alverno College  
Mount Mary College

**OHIO**

Notre Dame College of Ohio  
Ursuline College

**PENNSYLVANIA**

Bryn Mawr College  
Carlow College  
Cedar Crest College  
Chatham College  
Chestnut Hill College  
Harcum Junior College  
Immaculate College  
Moore College of Art and Design  
Rosemont College  
Seton Hill College  
Wilson College

**SOUTH CAROLINA**

Columbia College  
Converse College

**VERMONT**

Trinity College of Vermont

**VIRGINIA**

Hollins College  
Mary Baldwin College  
Randolph-Macon Woman's College



## **Appendix K: Members of the Joint Oceanographic Institutions Incorporated (JOI)**

The Institute of Geophysics  
The University of Texas at Austin

The Lamont-Doherty Geological Observatory  
Columbia University

The Rosenstiel School of Marine and Atmospheric Science  
University of Miami

The College of Oceanography  
Oregon State University

The Graduate School of Oceanography  
University of Rhode Island

The College of Geosciences and Maritime Studies  
Texas A&M University

The School of Ocean and Earth Science and Technology  
University of Hawaii

The Woods Hole Oceanographic Institution

The Scripps Institution of Oceanography  
University of California, San Diego



**Appendix L: Members of the Consortium  
for Oceanographic Research and Education, Inc.**

Institutions of the Board of Governors

University of Alaska  
University of California, San Diego  
University of California Consortium  
    Irvine  
    Los Angeles  
    Santa Barbara  
    Santa Cruz  
Columbia University  
University of Delaware  
Harbor Branch Oceanographic Institution  
University of Hawaii  
University of Maryland  
University of Miami  
North Carolina State University  
University of North Carolina at Wilmington  
Oregon State University  
University of Rhode Island  
The University of Texas at Austin  
Texas A&M University  
University of Washington  
The Woods Hole Oceanographic Institution

Other Institutions

Bigelow Laboratory for Ocean Sciences  
University of Connecticut  
University of Michigan  
Monterey Bay Aquarium Research Institute  
Moss Landing Marine Laboratories  
Old Dominion University  
College of William and Mary

## **Appendix M: Members of the National Association of Marine Laboratories (NAML)**

Dr. Kenneth Able (NEAMGLL)  
Inst. Marine and Coastal Sciences  
Rutgers Univ., Marine Field Station  
800 Great Bay Blvd.  
Tuckerton, NJ 08087  
(609)296-5260; -1024  
[able@arctic.rutgers.edu](mailto:able@arctic.rutgers.edu)

Dr. James J. Alberts (SAML)  
Univ. of Georgia, Marine Institute  
Sapelo Island, GE 31327  
(912)485-2221; FAX: 485-2133  
[jalberts@uga.cc.uga.edu](mailto:jalberts@uga.cc.uga.edu)

Dr. Robert van Aller (Bill Walker)  
Gulf Coast Research Laboratory  
703 East Beach Dr.  
P.O. Box 7000  
Ocean Springs, MS 39566-7000  
(601)872-4211; FAX: 872-4204, -4279

Dr. Larry Atkinson (SAML)  
Coastal Physics and Oceanography  
Old Dominion University  
Norfolk, VA 23529/0276  
(804)683-4285/-4926; FAX:683-5550  
[atkinson@ccpo.odu.edu](mailto:atkinson@ccpo.odu.edu)

Dr. Daniel Baden (SAML)  
Rosenstiel School, Mar. Atmos. Sci.  
University of Miami  
4600 Rickenbacker Causeway  
Miami, FL 33149/1098  
(305)361-4738; FAX: 361-4001  
[dbaden@rsmas.miami.edu](mailto:dbaden@rsmas.miami.edu)

Dr. Howard S. Barnes (SAML)  
Smithsonian Tropical Res. Inst.

Panama, Unit 0948  
APO AA 34002-0948, USA  
(507)227-5211; FAX: 232-6197  
[stri.tivoli.forda@ic.si.edu](mailto:stri.tivoli.forda@ic.si.edu)  
(Ana Maria Ford, Adm. Asst.)

Dr. David Bechler (SAML)  
Center, Coastal and Marine Studies.  
Lamar University  
P.O. Box 10037  
Beaumont, TX 77710-0037  
(409) 880-8253; FAX: 880-8007  
[dlbechler@lub001.lamar.edu](mailto:dlbechler@lub001.lamar.edu)

Dr. Richard L. Benefield (SAML)  
Seabrook Marine Laboratory  
P.O. Box 8  
Seabrook, TX 77586  
(713)474-2881; FAX: 474-2812

Dr. Peter R. Betzer (SAML)  
Department of Marine Sciences  
University of South Florida  
140 Seventh Ave., South  
St. Petersburg, FL 33701  
(813)893-9130; FAX: 893-9189

Dr. Paul Bienfang (WAML)  
Center for Applied Aquaculture  
Oceanic Institute  
P.O. Box 25280  
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(808)259-7951; FAX: 259-5971  
[74763.2226@compuserve.com](mailto:74763.2226@compuserve.com)

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Great Lakes Center  
SUNY College at Buffalo

1300 Elmwood Ave.  
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(716)878-4329; FAX: 878-4009  
[brandtsb@snybufaa.cs.snybuf.edu](mailto:brandtsb@snybufaa.cs.snybuf.edu)

Dr. Peter Brewer (WAML)  
Monterey Bay Aquarium Res. Inst.  
160 Central Ave.  
Monterey, CA 93940  
(408)647-3700  
[brpe@mbari.org](mailto:brpe@mbari.org)

Dr. Charles J. Brokaw (WAML)  
Kerckhoff Marine Laboratory  
California Institute of Technology  
101 Dahlia St.  
Corona Del Mar, CA 92625  
(818)395-6294; FAX: (714) 675-1837

Dr. Arthur Brooks (NEAMGLL)  
Center, Great Lakes Studies  
University of Wisconsin  
600 E. Greenfield Ave., Box 413  
Milwaukee, WI 53204  
(414)382-1704; FAX: 382-1705  
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Dr. Richard Brusca (SAML)  
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College/Univ. of Charleston  
205 Fort Johnson  
Charleston, SC 29412-6412  
(803)762-5550; FAX: 762-5555  
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Dr. John E. Burris (NEAMGLL)  
Marine Biological Laboratory (MBL)  
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Dr. Kirk Cochran (NEAMGLL)  
(Dr. William Wise)  
Marine Sciences Research Center  
State University of New York  
Stony Brook, NY 11794  
(516)632-8700; FAX: 632-8820  
[kcochran@ccmail.sunysb.edu](mailto:kcochran@ccmail.sunysb.edu)

Dr. Patrick Colin (WAML)  
Coral Reef Research Foundation  
Chuuk Atoll Research Laboratory  
P.O. Box 70  
Weno, Chuuk State  
Federated States of Micronesia  
FAX: 011(691) 330-4413

Dr. David Correll (SAML)  
Smithsonian Environ. Research Cntr.  
647 Contees Wharf Rd.; P.O. Box 28  
Edgewater, MD 21037-0028  
(301)261-4190; FAX: 261-7954  
[correll@sercsi.edu](mailto:correll@sercsi.edu)

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Hampton, VA 23668  
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Dr. Michael Dagg (SAML)

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Marine Consortium (LUMCON)  
8124 Hwy., 56  
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Intergovernmental Oceanographic Commission web site.

[www.nextwave.sciencemag.org/discussion/](http://www.nextwave.sciencemag.org/discussion/)

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Science magazine's discussion on affirmative action.

[www.savstate.edu/scitech/MarineSci/MBI/htm](http://www.savstate.edu/scitech/MarineSci/MBI/htm)

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## Appendix O: Notes and Statistical Tables

The demographic tables presented herein are a combination of tables from the National Science Foundation report, *Women, Minorities, and Persons With Disabilities in Science and Engineering: 1998*, (NSF 99-338), with noted sources, as well as those from the Proceedings of the 1995 Conference. As there are no readily available, more current sources of needed demographic information on minorities holding graduate degrees in science or engineering, it was not possible to include tables that would provide a more comprehensive summary. It is our hope, however, that the need for such information in the general effort to ensure equity and to reflect the diverse racial/ethnic composition of our nation in the scientific and engineering professions would inspire the continuous assemblage of the necessary data for the ongoing development of current comprehensive tables.

It is important to note that unprecedented shifts in federal policy and appropriations for graduate programs over the last five years forced higher education and states to take on greater fiscal responsibilities for graduate programs and student assistance. While Congress continues to cut financial aid for graduate studies, tuition has accelerated at more than twice the rate of inflation for the last fifteen years. Although President Clinton has proposed an increase for the Graduate Assistance in Areas of National Need (GAANN) program, Harris, Javits and faculty development fellowships were targeted to be eliminated in FY 97. In the face of severe budget cuts at the national and state levels, prospects become even dimmer for minorities and particularly minorities in the sciences. In 1994, the Department of Education allocated \$65.1 million in graduate education. In 1996, the request was reduced substantially to \$31 million.

The Bureau of the Census projects, . . . by 2012 more Blacks than non-Hispanic Whites would be added to the population each year. Around 2030, the total elementary school-aged cohort of the U.S. would be about equally divided between non-Hispanic Whites and all other racial/ethnic groups combined. (NSF. *Women, Minorities, and Persons with Disabilities in Science and Engineering: 1994*, p. 11. Arl. VA, 1994 (NSF 94-333). These demographic changes during the next century demand a major national commitment to diversify the small group of U.S. citizens who combine creativity and scientific training to:

- Determine national scientific policy and research priorities,
- Develop new products and solutions,
- Conduct research to improve the quality of life,
- Become faculty members to prepare future leaders in all fields, and
- Influence students as role models to advance scientific literacy.

One of the primary concerns of this conference was to address the national deficit of minorities in the sciences in the U.S. The term deficit, is more than appropriate for two reasons:

(1) African Americans, Hispanics, and Native Americans received two percent or less of the 1994 doctorates earned in mathematics, environmental sciences, and engineering and no African American, Hispanics or Native Americans received doctorates in oceanography and marine sciences. (See the following Tables)

<b>Table 1: 1994 Doctorates To U.S. Citizens By Race/Ethnicity Mathematics</b>										
Mathematics	African American		Asian		Caucasian		Hispanic		Native American	
Applied Mathematics	1	1%	28	21%	99	76%	2	2%	0	—
Algebra	2	4%	2	4%	46	88%	0	—	0	—
Analysis and Functional Analysis	1	2%	11	19%	46	79%	0	—	0	—
Geometry	1	4%	7	30%	13	57%	2	9%	0	—
Logic	2	10%	0	—	17	85%	1	5%	0	—
Number Theory	0	—	4	16%	19	76%	2	8%	0	—
Mathematical Statistics	2	2%	36	32%	72	63%	1	1%	1	1%
Topology	0	—	6	24%	16	64%	1	4%	1	4%
Computing Theory and Practice	0	—	3	38%	5	63%	0	—	0	—
Operations Research	0	—	6	33%	10	56%	1	6%	0	—
Mathematics, General	2	2%	30	25%	85	70%	3	2%	0	—
Mathematics, Other	0	—	8	16%	43	84%	0	—	0	—
* TOTAL	11	2%	141	22%	471	73%	13	2%	2	.3%

Summary Report 1994 Doctorate Recipients from United States Universities (1995),  
Office of Scientific and Engineering Personnel, National Research Council (NRC).  
National Academy Press, Washington, DC.

\* Percentages may not equal 100%, due to rounding.



<b>Table 3: 1994 Doctorates To U.S. Citizens By Race/Ethnicity    Physics and Astronomy</b>										
Physics and Astronomy	African American		Asian		Caucasian		Hispanic		Native American	
Astronomy	0	—	5	10%	42	82%	1	2%	0	—
Astrophysics	0	—	5	8%	54	90%	1	2%	0	—
Acoustics	0	—	3	20%	12	80%	0	—	0	—
Chemical and Atomic/Molecular	1	1%	23	23%	73	72%	5	5%	0	—
Elementary Particles	1	1%	13	12%	92	84%	3	3%	0	—
Fluids	0	—	1	10%	9	90%	0	—	0	—
Nuclear	0	—	15	20%	60	79%	1	1%	0	—
Optics	1	1%	21	25%	58	70%	3	4%	0	—
Plasma and High-Temperature	1	2%	13	22%	44	73%	1	2%	1	2%
Polymer	1	6%	4	25%	9	56%	2	13%	0	—
Solid State and Low-Temperature	3	1%	84	33%	156	62%	7	3%	0	—
Physics, General	2	1%	50	25%	140	69%	4	2%	0	—
Physics, Other	1	1%	28	24%	83	70%	3	3%	1	1%
* TOTAL	11	1%	265	23%	832	72%	31	3%	2	.2%

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National Academy Press, Washington, DC.

\* Percentages may not equal 100%, due to rounding.

<b>Table 6: 1994 Doctorates To U.S. Citizens By Race/Ethnicity    Engineering</b>										
Engineering	African American		Asian		Caucasian		Hispanic		Native American	
Aerospace, Aeronautic, Astronautic	1	1%	23	18%	100	77%	3	2%	1	1%
Agricultural	0	—	9	22%	28	68%	2	5%	1	2%
Bioengineering and Biomedical	0	—	22	17%	98	78%	3	2%	1	1%
Ceramic Sciences	0	—	3	14%	17	81%	0	—	0	—
Chemical	8	2%	79	24%	234	70%	5	1%	1	.3%
Civil	6	3%	57	24%	161	68%	12	5%	0	—
Communications	0	—	7	41%	8	47%	2	12%	0	—
Computer	1	1%	36	38%	58	60%	1	1%	0	—
Electrical, Electronics	16	2%	262	33%	481	61%	18	2%	1	.1%
Engineering Mechanics	0	—	26	41%	38	59%	0	—	0	—
Engineering Physics	0	—	3	25%	9	75%	0	—	0	—
Engineering Science	0	—	8	31%	17	65%	1	4%	0	—
Environmental Health Engineering	2	4%	12	22%	38	70%	2	4%	0	—
Industrial Manufacturing	6	5%	29	24%	83	70%	1	1%	0	—

\* Percentages may not equal 100%, due to rounding.

<b>Table 6: (Continued) 1994 Doctorates To U.S. Citizens By Race/Ethnicity Engineering</b>										
Engineering	African American		Asian		Caucasian		Hispanic		Native American	
Industrial Manufacturing	6	5%	29	24%	83	70%	1	1%	0	—
Materials Science	2	1%	71	29%	161	67%	4	2%	1	.4%
Mechanical	7	1%	153	32%	296	63%	8	2%	0	—
Metallurgical	1	3%	8	23%	24	69%	0	—	0	—
Mining and Mineral	1	8%	6	46%	6	46%	0	—	0	—
Nuclear	0	—	8	19%	32	76%	1	2%	0	—
Ocean	0	—	4	36%	6	55%	0	—	0	—
Operations Research	2	8%	4	17%	18	75%	0	—	0	—
Petroleum	0	—	8	44%	9	50%	1	6%	0	—
Polymer/Plastics	0	—	9	33%	16	59%	1	4%	0	—
Systems	0	—	7	23%	23	74%	1	3%	0	—
Engineering, General	0	—	6	32%	12	63%	0	—	0	—
Engineering, Other	1	2%	8	15%	43	81%	0	—	0	—
* TOTAL	32	2%	535	29%	1249	68%	1	.1%	5	.3%

Summary Report 1994 Doctorate Recipients from United States Universities (1995),  
Office of Scientific and Engineering Personnel, National Research Council (NRC).  
National Academy Press, Washington, DC.

\* Percentages may not equal 100%, due to rounding.

(2) A sizable percentage of PhDs in the sciences were awarded to non-U.S. citizens.